~~101. (Amended) The method of claim 103 further comprising the following step:~~

assessing, by using an endogenous ligand based assay, the impact of the non-endogenous compound of step (d) on the binding of an endogenous ligand for the known GPCR version of the non-endogenous version of said known GPCR of step (a) with said known GPCR.

Please add new claims **103-177**:

103.     **(New)** A method for directly identifying a non-endogenous compound as a compound having an activity selected from the group consisting of: inverse agonists, parallel agonists, and partial agonists, to a non-endogenous, constitutively activated version of known G protein-coupled receptor, said receptor comprising a transmembrane-6 region and an intracellular region, comprising the steps of:

(a)     selecting a non-endogenous version of a known GPCR;

(b)     confirming that the selected non-endogenous GPCR of step (a) is constitutively active;

(c)     contacting a non-endogenous candidate compound with the non-endogenous, constitutively activated GPCR of step of (b); and

(d)     determining, by measurement of the compound efficacy at said contacted receptor, whether said non-endogenous compound having inverse agonist activity as an inverse agonist or agonist activity is an agonist to said receptor of step (b).

104.     **(New)** The method of claim 103 wherein the known receptor is a serotonin receptor.

105. **(New)** The method of claim 104 wherein the known serotonin receptor has an amino acid sequence selected from the group consisting of SEQ ID NOS:425, 427, 429, 431, 433, 435, 437, 439, 441, 443, 445, 447, 449, and 451.

106. **(New)** The method of claim 102 wherein the known receptor is an arginine vasopressin receptor.

107. **(New)** The method of claim 106 wherein the known arginine vasopressin receptor has an amino acid sequence selected from the group consisting of SEQ ID NOS:453, 455, and 457.

108. **(New)** The method of claim 102 wherein the known receptor is a bombesin receptor.

109. **(New)** The method of claim 108 wherein the known bombesin receptor has an amino acid sequence of SEQ ID NOS:459.

110. **(New)** The method of claim 102 wherein the known receptor is a bradykinin receptor.

111. **(New)** The method of claim 110 wherein the known bradykinin receptor has an amino acid sequence selected from the group consisting of SEQ ID NOS:461 and 463.

112. **(New)** The method of claim 102 wherein the known receptor is an anaphylatoxin receptor.

113. **(New)** The method of claim 112 wherein the known anaphylatoxin receptor has an amino acid sequence selected from the group consisting of SEQ ID NOS:465 and 467.

114. **(New)** The method of claim 102 wherein the known receptor is a cannabinoid receptor.

115.    (New) The method of claim 114 wherein the known cannabinoid receptor has an amino acid sequence selected from the group consisting of SEQ ID NOS:469 and 471.

116.    (New) The method of claim 102 wherein the known receptor is a monocyte chemoattractant receptor.

117.    (New) The method of claim 116 wherein the known monocyte chemoattractant receptor has an amino acid sequence selected from the group consisting of SEQ ID NO:473 and 475.

118.    (New) The method of claim 102 wherein the known receptor is a MIP-1 receptor.

119.    (New) The method of claim 118 wherein the known MIP-1 receptor has an amino acid sequence selected from the group consisting of SEQ ID NOS:477 and 479.

120.    (New) The method of claim 102 wherein the known receptor is a thymus-expressed chemokine receptor.

121.    (New) The method of claim 120 wherein the known thymus-expressed chemokine receptor has an amino acid sequence of SEQ ID NO: 481.

122.    (New) The method of claim 102 wherein the known receptor is a corticotropin-releasing-factor receptor.

123.    (New) The method of claim 122 wherein the known corticotropin-releasing-factor receptor has an amino acid sequence of SEQ ID NO:483.

124.    (New) The method of claim 102 wherein the known receptor is an SDF1 receptor.

125. (New) The method of claim 124 wherein the known SDF1 receptor has an amino acid sequence of SEQ ID NO:485.

126. (New) The method of claim 102 wherein the known receptor is a dopamine receptor.

127. (New) The method of claim 126 wherein the known dopamine receptor has an amino acid sequence selected from the group consisting of SEQ ID NOS:487, 489, 491, and 493.

128. (New) The method of claim 102 wherein the known receptor is an endothelin receptor.

129. (New) The method of claim 128 wherein the known endothelin receptor has an amino acid sequence selected from the group consisting of SEQ ID NOS:495 and 497.

130. (New) The method of claim 102 wherein the known receptor is a formylpeptide receptor.

131. (New) The method of claim 130 wherein the known formylpeptide receptor has an amino acid sequence selected from the group consisting of SEQ ID NOS:499 and 501.

132. (New) The method of claim 102 wherein the known receptor is a galanin receptor.

133. (New) The method of claim 132 wherein the known galanin receptor has an amino acid sequence selected from the group consisting of SEQ ID NOS:503 and 505.

134. (New) The method of claim 102 wherein the known receptor is a gastric inhibitory polypeptide receptor.

135.    (New) The method of claim 134 wherein the known gastric inhibitory polypeptide receptor has an amino acid sequence of SEQ ID NO:507.

136.    (New) The method of claim 102 wherein the known receptor is a glutamate receptor.

137.    (New) The method of claim 136 wherein the known glutamate receptor has an amino acid sequence of SEQ ID NO:347.

138.    (New) The method of claim 102 wherein the known receptor is an SMC-1 receptor.

139.    (New) The method of claim 138 wherein the known SMC-1 receptor has an amino acid sequence of SEQ ID NO:509.

140.    (New) The method of claim 102 wherein the known receptor is a melanin concentrating hormone receptor.

141.    (New) The method of claim 140 wherein the known melanin concentrating hormone receptor has an amino acid sequence selected from the group consisting of SEQ ID NO:351, 355, 359, 363, 367, 371, 375, 379, 383, 387, and 391.

142.    (New) The method of claim 102 wherein the known receptor is a gastrin releasing peptide receptor.

143.    (New) The method of claim 142 wherein the known gastrin releasing peptide receptor has an amino acid sequence of SEQ ID NO:511.

144.    (New) The method of claim 102 wherein the known receptor is an acetylcholine receptor.

145.    (New) The method of claim 144 wherein the known acetylcholine receptor has an amino acid sequence selected from the group consisting of SEQ ID NOS:513, 515, 517, 519, and 521.

146.    (New) The method of claim 102 wherein the known receptor is a melanocortin receptor.

147.    (New) The method of claim 146 wherein the known melanocortin receptor has an amino acid sequence of SEQ ID NO:523.

148.    (New) The method of claim 102 wherein the known receptor is a Substance P receptor.

149.    (New) The method of claim 148 wherein the known Substance P receptor has an amino acid sequence of SEQ ID NO:525.

150.    (New) The method of claim 102 wherein the known receptor is a neurokinin receptor.

151.    (New) The method of claim 150 wherein the known neurokinin receptor has an amino acid sequence selected from the group consisting of SEQ ID NOS:527, and 529.

152.    (New) The method of claim 102 wherein the known receptor is a neuromedin receptor.

153.    (New) The method of claim 152 wherein the known neuromedin receptor has an amino acid sequence of SEQ ID NO:531.

154.    (New) The method of claim 102 wherein the known receptor is a Neuroprptide Y receptor.

155. (New) The method of claim 154 wherein the known Neuropeptide Y receptor has an amino acid sequence of SEQ ID NO:533.

156. (New) The method of claim 102 wherein the known receptor is a neurotensin receptor.

157. (New) The method of claim 156 wherein the known neurotensin receptor has an amino acid sequence selected from the group consisting of SEQ ID NOS:535 and 537.

158. (New) The method of claim 102 wherein the known receptor is an opiod receptor.

159. (New) The method of claim 158 wherein the known opiod receptor has an amino acid sequence selected from the group consisting of SEQ ID NOS:539, 541, 543, 545, and 547.

160. (New) The method of claim 102 wherein the known receptor is an orexin receptor.

161. (New) The method of claim 160 wherein the known orexin receptor has an amino acid sequence selected from the group consisting of SEQ ID NOS:549 and 551.

162. (New) The method of claim 102 wherein the known receptor is a pituitary adenylyl cyclase activating peptide receptor.

163. (New) The method of claim 162 wherein the known pituitary adenylyl cyclase activating peptide receptor has an amino acid sequence of SEQ ID NO:553.

164. (New) The method of claim 102 wherein the known receptor is a platelet activating factor receptor.

165.    (New) The method of claim 164 wherein the known platelet activating factor receptor has an amino acid sequence of SEQ ID NO:555.

166.    (New) The method of claim 102 wherein the known receptor is a prostaglandin receptor.

167.    (New) The method of claim 166 wherein the known prostagladin receptor has an amino acid sequence selected from the group consisting of SEQ ID NOS:557, 559, and 561.

168.    (New) The method of claim 102 wherein the known receptor is a parathyroid hormone receptor.

169.    (New) The method of claim 168 wherein the known parathyroid hormone receptor has an amino acid sequence selected from the group consisting of SEQ ID NOS:563 and 565.

170.    (New) The method of claim 102 wherein the known receptor is a secretin receptor.

171.    (New) The method of claim 170 wherein the known secretin receptor has an amino acid sequence of SEQ ID NO:567.

172.    (New) The method of claim 102 wherein the known receptor is a somatostatin receptor.

173.    (New) The method of claim 172 wherein the known somatostatin receptor has an amino acid sequence selected from the group consisting of SEQ ID NOS:569, 571, 573, 575, and 577.